

## CLAIMS

1. An internal combustion engine controller comprising target torque computation means for computing target torque based on the demand torque of an internal combustion engine such as the operation of an accelerator, means of computing a target throttle angle based on the target torque, and torque assist control means for assisting torque based on the state of the target torque and the operation state of the internal combustion engine, wherein

the torque assist control means carries out torque assist control by increasing the quantity of fuel when a torque increase is demanded.

2. An internal combustion engine controller comprising target torque computation means for computing target torque based on the demand torque of an internal combustion engine such as the operation of an accelerator and demand torque from an external system, means of computing a target throttle angle based on the target torque, and torque assist control means for controlling torque assist based on the state of the target torque and the operation states of the internal combustion engine and the external system, wherein

the torque assist control means comprises fuel correction quantity computation means, ignition time correction quantity computation means and fuel cut cylinder number computation means; and

the fuel correction quantity computation means carries out torque assist control by increasing the quantity of fuel when a torque increase is demanded.

3. The internal combustion engine controller according to claim 2, wherein the external demand torque is demand torque from an auto-cruise, transmission or vehicle dynamic control.

4. The internal combustion engine controller according to claim 1 or 3, wherein the operation state of the internal combustion engine is the uniform charge stoichiometric combustion state of the internal combustion engine having a three-way catalyst.

5. The internal combustion engine controller according to claim 4, wherein the fuel correction quantity computation means comprises fuel correction permission judging means which judges whether fuel correction is permitted or not based on the state of the target torque, the operation state of the external system and the estimated adsorption quantity of oxygen in a catalyst.

6. The internal combustion engine controller according to claim 5, wherein the fuel correction permission judging means permits torque assist control by increasing the quantity of fuel when torque increase is demanded by an external system such as vehicle stable control, brake control and traction control.

7. The internal combustion engine controller according to claim 5, wherein the fuel correction permission judging means permits torque assist control by increasing the quantity of fuel when the estimated adsorption quantity of oxygen in the catalyst is larger than a predetermined threshold value.

8. The internal combustion engine controller according to claim 7, wherein the fuel correction permission judging means comprises means of judging the emergency of a torque increase demand and permits torque assist control by increasing the quantity of fuel regardless of the storage quantity of oxygen in the catalyst for a torque increase demand having high emergency.

9. The internal combustion engine controller according to claim 6 or 7, wherein the fuel correction quantity computation means comprises oxygen storage computation means which increases the target adsorption ratio of oxygen in the catalyst when torque assist control by increasing the quantity of fuel is permitted.

10. The internal combustion engine controller according to claim 9, wherein the oxygen storage computation means returns the target adsorption ratio of oxygen in the catalyst to a normal value with a time delay when decision on the permission of torque assist control by increasing the quantity of fuel comes to an end.